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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,099	03/23/2004	Jianmin Shi	ARL 04-17	2520

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EXAMINER
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GARRETT, DAWN L

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/807,099

Applicant(s)

SHI ET AL.

Examiner

Dawn Garrett

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 24, 2006 has been entered.
2. The amendment received January 24, 2006 has been entered. The amendment to the specification is acknowledged. Claim 1 was amended. Claims 1-11 are currently pending.

### ***Claim Objections***

3. Claims 2-7 are objected to because of the following informalities: It is suggested that the preamble of claims 2-7 be changed in order to be consistent with the preamble of parent claim 1. For each of claims 2-7, "The compound of the claim 1" should be changed to claim language such as "The EL device according to claim 1 comprising said compound". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1774

5. Claims 1-11 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Jarikov (US 2004/0076853 A1). Jarikov discloses organic light-emitting diodes with improved operational stability (see title). The devices include a substrate, an anode and a cathode and a luminescent layer between the anode and cathode. The luminescent layer includes a host and at least one dopant. The host includes at least two components (see abstract). A preferred material for the first host component includes formula (i) (see par. 1432), which reads upon the basic skeletal structure of the formula of claim 1. With regard to the claim 1 limitation that the compound is doped into a luminescent layer, Jarikov teaches the first component may be used in an amount less than that of the second host (see for example Table 2). The Jarikov teaching of the first host compound in an amount less than the second host reads upon the limitation that the anthanthrene compound formula (i) is included in a device in a “doped” amount. The skeletal structure of formula (i) may comprise substituent groups R1 through R12 which are individually groups such as hydrogen, fluoro, alkoxy, aryloxy, alkyl of from 1 to 24 carbon atoms, aryl of from 5 to 30 carbon atoms, substituted aryl, heterocycle groups, amino containing groups, and cyano (see par. 1434). Although Jarikov does not *exemplify* formula (i) compounds wherein at least one substituent group is not hydrogen, it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed compounds according to claims 1-11 and to have included them in a device as a dopant, because Jarikov teaches the substituent groups for formula (i) required by claims 1-11.

6. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jarikov (EP 1359790). Jarikov discloses organic light-emitting diodes with improved operational stability (see title). The devices include a substrate, an anode and a cathode and a luminescent layer

Art Unit: 1774

between the anode and cathode. The luminescent layer includes a host and at least one dopant. The host includes at least two components (see abstract). A preferred material for the first host component includes formula (i) (see page 9), which reads upon the basic skeletal structure of the formula of claim 1. With regard to the claim 1 limitation that the compound is doped into a luminescent layer, Jarikov teaches the first component of the host may be used in an amount less than that of the second host (see for example, Table II and examples). The Jarikov teaching of using first host compounds in an amount less than the second host compounds reads upon the limitation that the anthanthrene compound formula (i) is included in a “doped” amount in the devices. The skeletal structure of formula (i) may comprise substituent groups R1 through R12 which are individually groups such as hydrogen, fluoro, alkoxy, aryloxy, alkyl of from 1 to 24 carbon atoms, aryl of from 5 to 30 carbon atoms, substituted aryl, heterocycle groups, amino containing groups, and cyano (see document, especially page 9). Although Jarikov does not *exemplify* formula (i) compounds wherein at least one substituent group is not hydrogen, it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed compounds according to claims 1-11 and to have included them in a device as a dopant, because Jarikov teaches the substituent groups for formula (i) required by claims 1-11.

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

Art Unit: 1774

*Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of copending Application No. 10/807,130 in view of JP 08199162 A. Application '130 teaches the exact same derivatives as the present application. JP '162 teaches it is well known to form a luminescent device comprising a light emitting layer with a luminescent material as a dopant material. It would have been obvious for one of ordinary skill in the art at the time of the invention to have formed a light emitting layer with the '130 luminescent materials as a dopant material in a light emitting layer of a device, because JP '162 teaches it is well know to form a device in such a way with luminescent material.

This is a provisional obviousness-type double patenting rejection.

#### ***Response to Arguments***

9. Applicant's arguments filed August 29, 2005 have been fully considered but they are not persuasive.

The examiner acknowledges applicant's request for an interview in the remarks filed January 24, 2006. Applicant is invited to contact the examiner to arrange an interview if an interview is still wanted by applicant.

Art Unit: 1774

With regard to the arguments over Jarikov, the Jarikov application upon which the US publication is based was filed prior to applicant's application. Applicant states that in contrast to Jarikov, their anthanthrene derivative is intentionally doped into a host matrix to prevent aggregation. Applicant's have not claimed a non-aggregated compound, device, and/or light-emitting layer. Furthermore, Jarikov only teaches the compounds are capable of aggregation in their device. Jarikov clearly teaches a luminescent layer with an amount of a first host material such as the anthanthrene derivative (i) in an amount less than another host compound in the luminescent layer. The lesser amount meets the claim limitation of "doped into". The differing properties argued by applicant with regard to the present claims are not limitations or requirements of the present claims. The claims as presently presented are not distinguished over the Jarikov devices.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1774

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dawn Garrett  
Primary Examiner  
Art Unit 1774

D.G.  
March 20, 2006